



Complete Summary

GUIDELINE TITLE

Acupuncture and electroacupuncture: evidence-based treatment guidelines.

BIBLIOGRAPHIC SOURCE(S)

Council of Acupuncture and Oriental Medicine Associates (CAOMA), Foundation for Acupuncture Research. Acupuncture and electroacupuncture. Evidence-based treatment guidelines. Calistoga (CA): Council of Acupuncture and Oriental Medicine Associates (CAOMA); 2004 Dec. 111 p. [91 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
CONTRAINDICATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Conditions affecting the neuromusculoskeletal system, including:

- Head and face conditions
- Neck conditions
- Shoulder conditions
- Elbow conditions
- Forearm, hand, and wrist conditions
- Thorax and low back conditions
- Hip and thigh conditions
- Knee conditions
- Ankle and foot conditions

- Chronic and postoperative pain
- Fibromyalgia

GUIDELINE CATEGORY

Treatment

CLINICAL SPECIALTY

Internal Medicine
Neurology
Orthopedic Surgery
Physical Medicine and Rehabilitation
Rheumatology
Sports Medicine
Surgery

INTENDED USERS

Health Care Providers
Health Plans
Managed Care Organizations
Nurses
Patients
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

- To establish evidence-based best practice guidelines for acupuncture and electroacupuncture to be utilized by practitioners, patients, regulators, and third-party payors to make health-related decisions that result in medically sound treatment approaches that lead to effective and reproducible outcomes in the clinical setting
- To standardize the approach to the application of acupuncture and electroacupuncture to various conditions of injury and ill health
- To promote the appropriate utilization of these therapeutic interventions
- To ensure safe, effective, reliable, and cost effective care for the consumer
- To get the injured worker the treatment they need for recovery in the most timely manner in order to allow for the return of that injured worker back to the workforce as quickly as possible

TARGET POPULATION

Patients with conditions affecting the neuromusculoskeletal system

INTERVENTIONS AND PRACTICES CONSIDERED

1. Acupuncture (needling therapy; trigger point)
2. Electroacupuncture (percutaneous electrical nerve stimulation; percutaneous neuromodulation therapy)

MAJOR OUTCOMES CONSIDERED

- Frequency of flare-ups or episodes of pain
- Duration of flare-ups or episodes of pain
- Sensitivity of pain to triggers and aggravating factors
- Incidence of paresthesias and stiffness
- Range of motion
- Strength and endurance
- Amount of bruising, discoloration, scars, swelling, tenderness
- Medication and aids use
- Frequency of relapse
- Incidence of hospital visits or other medical interventions

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Systematic Review of Published Literature

Two different searches were done on MEDLINE/PubMed to identify two categories of studies. The first was done to identify the largest, most comprehensive or systematic reviews available on acupuncture using the following search terms: "acupuncture", limiting the search to reviews in English, on human subjects, covering all dates from 1998 (post-National Institutes of Health [NIH] consensus statement on acupuncture) up to July, 2004. This search identified 375 reviews. The second search was done to locate high-quality positive outcome trials on acupuncture using the following search terms: "acupuncture or electroacupuncture", limiting the search to randomized controlled trials, in English, on human subjects, covering all dates up to July, 2004. This search identified 486 randomized controlled trials. The full articles were located and the references and bibliographies of these articles were searched for other potential comprehensive reviews and randomized controlled trials that may have been missed in the original MEDLINE searches. These potentially useful reviews and randomized controlled trials were then screened and selected using the same selection criteria as applied previously.

Selection Criteria - Published Research Reviews

For the first search, the most comprehensive reviews, overviews, and summaries done in English after 1997, were given priority and selected for review. It was the intention of the authors to draw upon the most comprehensive post-NIH overviews and reviews done to date as a basis for the current recommendations in order to ensure the most appropriate recommendations available and minimize the risk for biased conclusions. The inclusion criteria for the selection of these reviews and summaries were the following: 1) the review or overview was a

review or a summary of other reviews (including systematic reviews) not individual trials, 2) conclusions were made on acupuncture for neuromusculoskeletal conditions, 3) the review or summary was done after 1997 (post-NIH), and 4) in the English language.

Selection Criteria - Randomized Controlled Trials

For the second search, 486 randomized controlled trials were found matching the above search terms. These were selected based on the following criteria: 1) trials were randomized or quasi-randomized, 2) controlled (with the control consisting of one of the following: no treatment, treatment as usual, placebo, sham acupuncture, or active control), 3) experimental treatment consisting of either acupuncture or electroacupuncture (or PENS: percutaneous electroneural stimulation, or PNT: percutaneous neuromodulation therapy), 4) the trial was on a type of neuromusculoskeletal condition, 5) there was some degree of clinical effectiveness of the experimental therapy reported and 6) available in the English language. Trials which reported sufficient sample size (over 30 in treatment group), blinding, statistical significance and other inferential statistics were preferred for selection in order to maintain high quality of studies considered.

NIH and WHO Reports

Additionally, the NIH Consensus Statement (1998) and the World Health Organization's Acupuncture: Review and Analysis of Reports of Controlled Clinical Trials, (1999) were included to serve as an evidence basis due to their unique size, scope of the studies, the participation of a large number and variety of reviewers, and the sponsorship by highly credible, independent government and non-government agencies, even though these reviews did not meet the above inclusion criteria. A summary of the objectives and methods used in the development of their recommendations is provided in the original guideline document.

NUMBER OF SOURCE DOCUMENTS

- Five reviews, overviews, or summaries met the inclusion criteria and were selected.
- A total of 72 randomized controlled trials supporting the efficacy of acupuncture for various neuromusculoskeletal conditions were found to meet the inclusion criteria.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Communication and Meetings

The formulation of the treatment recommendations were made by communication through phone conferences, electronic mail, and occasional face-to-face meetings. Over thirty such meetings were conducted, during which discussion took place on various issues regarding the content of the guidelines, including the recommendations for treatment.

Decision-Making

Decisions were arrived at by consensus among participants following discussion of the issue in question. When there was disagreement on an issue, open discussion was encouraged, then the issue would go to the editorial committee, and then to an executive committee for final decision.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

- A. A strong recommendation, based on an evaluation of the available evidence and general consensus of the expert panel, that acupuncture and electroacupuncture treatment is effective, always acceptable, and indicated
- B. A recommendation that was based on an evaluation of the available evidence and general consensus of the expert panel that acupuncture and electroacupuncture treatment should be considered acceptable, effective, and indicated.
- C. A recommendation that is not well established by evidence, or for which there is conflicting evidence regarding usefulness or efficacy, but which the expert panel has determined that acupuncture and electroacupuncture treatment may be acceptable, effective, and indicated.
- D. A recommendation, based on evidence or general agreement, that acupuncture and electroacupuncture treatment may be considered not useful or effective.
- E. A strong recommendation, based on evidence or general agreement, that a given procedure or treatment is not useful or effective, or in some cases may be harmful, and should be excluded from consideration.

COST ANALYSIS

Cost Efficacy of Acupuncture

Although cost efficacy studies are relatively few, there are a number of studies suggesting the potential for vast savings to our healthcare system by avoiding surgeries, reducing expensive medical treatments and returning injured workers to work earlier has been well documented.

For example, in a study of 56 male patients who were being rehabilitated at a workers' compensation clinic for chronic low back pain (average duration 28.6 weeks), and who had already failed standard therapy, were randomly assigned to either continue standard therapy or receive standard therapy plus acupuncture. Standard therapy consisted of physical therapy, remedial exercises, and occupational therapy. Acupuncture, with electrical stimulation of the needles, was administered at variable sites depending on the location of the pain, for variable numbers of treatment sessions up to a maximum of 15, (mean 7/9), depending on response to treatment. Of the 29 patients that received acupuncture, 18 returned to their original or equivalent jobs; an additional 10 returned to lighter employment. Of the 27 who received only standard therapy, 4 returned to their original or equivalent jobs and 14 to lighter employment. The significance of this study is that this study showed that a relatively simple course of acupuncture added into a standard rehabilitation program for patients with chronic back pain was found to significantly improve the treatment outcome when compared to effects of the rehabilitation program administered alone. Many more of those who received acupuncture as supplemental care were able to return to their previous type of employment.

In another study, 65 patients with pain, mainly of musculoskeletal origin, were offered treatment by an acupuncturist as an alternative to hospital outpatient referral. The cost of acupuncture treatment was compared to that of the referral that would have been made if acupuncture had not been offered. The acupuncture was found to have cost \$21, 886.00 (London Exchange) U.S. dollars against the cost for hospital referrals of \$53, 566.00. A minimum total saving for all patients was \$27,832.00 giving an average saving per patient of \$464.00. Additional hidden savings through avoiding further hospital procedures and expenditure on medication were not taken into account. The study concluded that "acupuncture in selected patients and when used by an appropriately qualified practitioner appears to be a cost effective therapy for use in general practice, reducing the need for more expensive hospital referrals."

In another study 29 patients with severe osteoarthritis of the knee (42 knees), each of whom was awaiting arthroplasty surgery, were randomized to receive a course of acupuncture treatment or be placed on a wait list and receive a course of acupuncture treatments starting 9 weeks later. At the end of the study, 7 patients were able to avoid surgery, at a savings of \$9,000 per operation.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the quality of the evidence (Levels I-IV) and the strength of recommendations (Grades A-E) are found at the end of the "Major Recommendations" field.

Electroacupuncture (EA)

General Operational Guidelines

The physiological features of the body allow the use of simple, rational, repeatable rules for the application of EA. This includes proper placement of the output leads to achieve the best therapeutic effect while at the same avoiding unwanted current paths in the body. Perhaps the most important consideration in the use of EA, and acupuncture in general, is the selection of candidate neurovascular nodes (acupoints) to be employed to achieve the best clinical outcome for the patient's condition. Duration of treatment, output amplitude, output frequency, and selection of proper operating mode also need to be considered. (Details are provided in the original guideline document.)

When to Consider Using EA

Generally the application of EA stimulation greatly enhances the effect of needling therapy and can increase level of analgesia and significantly extends the period of treatment effectiveness. Many practitioners apply EA as a primary modality for acute and chronic pain and musculoskeletal problems because of its ability to produce a strong analgesic effect. The application of EA is a primary consideration for pain, muscle spasms, numbness, treating nerve dysfunction, paralysis, and atrophy. EA can also be employed in surgical or dental procedures as an adjuvant to normal anesthetics. EA is very effective in treating withdrawal symptoms of individuals quitting the use of addictive substances such as nicotine, alcohol, cocaine, opiates, and some prescription drugs. EA can also be used to enhance cervical dilatation and uterine contractions to induce labor. Stimulation promotes tissue repair, healing and regenerating of nerve fibers essential to treat many chronic disorders.

Placement of Leads

Physiological organization of the body that is critical to afferent and efferent processes affecting the vessels, viscera, muscles, and peripheral nerves is basically longitudinal and ipsilateral in nature. The ipsilateral nature of the ascending afferent signals dictates placing the positive and negative leads of one particular output channel of the EA/PENS device along vertical pathways on the same side of the body. One principal goal in lead placement is to conform to the segmental and axial organization of the body while making certain to prevent cross currents. Cross currents are to be avoided especially in preventing transcranial current pathways.

This is accomplished by placing the positive and negative leads of one particular output channel of the EA/PENS device along vertical pathways on the same side of the body. If the presenting problem is ipsilateral in nature, such as pain in one shoulder, the positive and negative leads are placed at appropriate locations along the affected muscular pathway. If the problem is bilateral, such as low back pain, then one set of positive and negative leads, are placed on one side of the back, and another set placed at the same relative locations on the other side. However, there is about a 40% crossover on the descending control restorative signals. This crossover features allows treatment of the opposite side to the one containing a problem to benefit the affected side, especially where the patient cannot tolerate direct treatment of the affected side.

Duration of Stimulation

Typical duration of EA application is 15 to 30 minutes. In cases of dental or surgical analgesia, the duration may be longer. In treatment of withdrawal from a powerful opiate, the duration may be increased to 45 minutes and applied twice a day for 3 to 4 days.

Amplitude (Strength of Current)

Under most conditions, amplitude of the output signal is only adjusted to the level that the patient can detect a slight sensation that feels like tapping on the skin. In many cases of trauma and pain there may be a deficit in sensory perception. These patients may not feel the electrical signal even though strong muscular contractions are activated. Thus, amplitude is adjusted only to the level where either the patient feels a slight sensation or the practitioner observes small movements of the needle or perhaps very slight muscular contractions. Excess strength of stimulation can induce a stress response. After several minutes of stimulation, control signals generated in the body, reduce the response to the stimulus and the patient no longer feels the EA stimulus. Thus, the amplitude is periodically readjusted to maintain an awareness of a slight tapping sensation. The control response generated by the body is mediated by descending neural pathways in the spinal cord. This is the prime effect that is sought in the treatment of all problems, including musculoskeletal and viscera conditions.

Frequency and Operating Mode

Care needs to be taken not to induce stress by either excess amplitude or using frequencies that are too high.

Low frequency application (2 hertz [Hz].) always invokes the analgesic and restorative processes of acupuncture. This frequency (2 Hz.) is suitable for use in treating all pain conditions, substance abuse, osteoarthritis, rheumatoid arthritis, vascular or blood distribution problems and organ dysfunction. Higher frequencies (25 to 50 Hz.) are selected where nerve dysfunction or paralysis is involved and this is usually in conjunction with a low frequency (mixed mode). Frequencies of 25 Hz. and above can produce tonic contraction of muscles and is useful in treating certain muscular conditions when applied in discontinuous or mixed mode. General considerations of mode selection involve the following:

- **Continuous mode:** Used for most conditions, especially in treating pain, substance withdrawal symptoms, visceral problems, inducing labor, and using EA/PENS for surgical analgesia. Normal treatment duration is about 20-35 minutes and there is little risk of developing tolerance even if this is applied several times a day. When used for surgical or dental analgesia, the duration may be extended. Tolerance can be produced after many hours of continuous application or in several days with a few hours of daily EA/PENS stimulation
- **Mixed mode:** Is considered when a clinical condition involves paralysis, atrophy, and impairment due to loss of nerve function. Mixed mode can also be applied to enhance segmental levels with the higher frequency component as well as activating axial effects with the lower frequency component.
- **Discontinuous mode:** Employed where a longer period of stimulation is needed and also where stimulation is directed to strengthen particular muscular areas or to treat problems such as scoliosis. In situations of long duration EA/PENS, use of discontinuous mode (about 3 seconds on and 3 seconds off) can be considered to reduce potential of developing tolerance

General Precautions and Contraindications for EA

- Profound analgesia induced by EA puts patient at risk of self injury, therefore the patient must be advised or restricted from strenuous physical activity after treatment.
- Contraindicated in left chest region for patients with cardiac pacemakers, or for areas with imbedded neural stimulators and other electrical devices.
- Not to be used on lower abdomen in pregnant women.
- High frequency or high amplitude application may induce stress, which is contraindicated in cases of hypertension.
- High amplitude EA that causes muscle fiber recruitment (twitching) can irritate or re-injure acute local strains and sprains.
- EA can sedate older or fatigued patients, causing drowsiness after treatment; hence some patients should arrange for others to drive them home after an EA treatment.

Treatment Guidelines

Acupuncture and electroacupuncture therapy have been utilized to treat a broad spectrum of illnesses and injuries, and have proven particularly effective at treating anatomically localized neuromusculoskeletal (NMS) injuries caused by repetitive stress or trauma. The anatomical NMS injuries that are most typically treated by acupuncture and electroacupuncture are due to trauma, sports injuries, auto accidents, and work-related repetitive stress injuries of the tendon, ligament, and bursa, and injuries in and around joint areas and the soft tissues (muscles, ligaments, etc) surrounding the spine. Acupuncture and electroacupuncture are also commonly used to treat chronic or post-operative pain, headaches, nausea, menstrual-related pain, and other conditions that may be anatomically, neurologically, or physiologically based.

Severity and Duration of Conditions

Conditions of illness and injury are generally classified into three or more categories, depending upon severity and duration. The commonly used

descriptions of the stages of illness and injuries are acute, sub-acute, chronic, and recurrent.

- **Acute** - Having rapid onset, relatively brief duration, and severe symptoms; which have duration within four weeks of onset.
- **Sub-Acute** - Somewhat less than acute in severity, intermediate in character between acute and chronic symptoms within three months duration from onset of symptoms.
- **Chronic** - Injury of long duration and/or frequent recurrence of longer than three months duration.
- **Recurrent/Flare-Up** - Return of symptoms of original injury at intervals or as a result of aggravating factors.

Treatment Frequency and Duration

The effects of acupuncture are generally cumulative. Acupuncture initiates physiologic tissue restorative and regenerative mechanisms. (See Physiological Mechanisms of Action in the original guideline document.) Frequency and duration of treatment are based on several factors including severity of condition, chronicity (duration of condition), previous episodes, pre-existing conditions, and other complicating factors. Such complicating factors present inherent difficulties in recovery, therefore, extra time and treatment is appropriate in order to observe a therapeutic response. The therapeutic effects of treatment should be assessed by subjective and objective assessments after each course of treatment. (See Measurable Outcomes in the original guideline document.)

Normally an initial course of treatment consists of 12 to 18 treatments over a 4 to 6 week period, depending on complicating factors. For acute conditions, fewer treatments may be necessary to observe a therapeutic effect and to obtain complete recovery. For chronic conditions, and conditions with complicating factors, extended treatment is recommended to observe response to treatment. As in most types of therapy, the earlier the patient receives treatment, the greater the probability of recovery, and the shorter the time to recovery.

Acupuncture is commonly utilized in chronic conditions because of effectiveness in pain management and limited treatment options. However, it should be noted that acupuncture and electroacupuncture can lead to complete recovery in many NMS conditions when it is offered in the acute and sub-acute stages of injury, particularly when used in conjunction with other therapeutic interventions, such as range of motion (ROM) and strengthening exercises and manual manipulation of the soft tissue.

Acupuncture or electroacupuncture are rarely performed as a single treatment, but are usually prescribed and performed as a series, or "course of treatments." Thus, treatment planning requires a recommendation for the number, frequency, and duration of treatments that is appropriately based upon the nature and extent of the injuries and the prognosis for a progressive and timely recovery from those injuries. Severe injuries, multiple injuries, metabolic disorders, and other complicating factors may require more frequent treatments over a longer duration of time. For example, while some multiple injuries can be treated simultaneously, others must be treated independently and sequentially, requiring increased treatment frequency.

The following recommendations for the frequency and duration of treatment are based upon moderate to severe injuries in an otherwise healthy patient. Individual case recommendations should be scaled accordingly.

- **Acute** - 3 treatments per week, decreasing frequency as symptoms resolve and are reduced.
- **Sub-Acute** - 3 treatments per week for up to four weeks. 2 treatments per week thereafter. This is also the time when a rehabilitation exercise program is usually introduced.
- **Chronic** - 2 to 3 treatments per week for up to eight weeks as an initial course of treatment, and 1 to 2 treatment per week thereafter.
- **Recurrent/Flare-Up** - 8 to 12 visits as needed over a 2 month period

Initial Course of Treatments

Frequency and Duration for Initial (Trial) Course of Treatments

Stage of Condition	Frequency	Duration	Re-evaluate after:
Acute	3x weekly	4 weeks	12 treatments
Sub-Acute	3x weekly	4 weeks	12 treatments
Chronic	2 to 3x weekly	6 to 8 weeks	12 treatments
Recurrent/Flare-up	2 to 3x weekly	4 to 8 weeks	12 treatments

A detailed or focused re-evaluation designed to determine the patient's progress and response to treatment should be conducted at the end of each course of treatment. Additionally, a brief assessment of the patients response to each treatment should be noted after each treatment is completed, and again before the next one is started, and recorded in progress notes (e.g., SOAP notes). When a patient's condition is not responding to treatment for a period of 2 to 3 weeks, a more thorough re-evaluation should be conducted immediately to determine if the condition is different or more serious than the initial diagnosis had indicated and/or whether the condition requires further diagnostic testing and/or referral to other diagnostic or treatment specialists.

Re-Evaluation and Re-examination

After an initial course of treatment has been concluded, the detailed or focused re-evaluation should determine whether the objectives of the initial treatment plan have been fulfilled, and the extent to which they have been fulfilled by the documentation of subjective and objective assessments. A determination and recommendation must be made as to whether an additional course of treatment would continue to contribute to the patient's recovery or not. In general, if the patient is showing improvement in subjective and objective assessments from the previous evaluation, then continued therapy is indicated. (See Measurable Outcomes in the original guideline document). Additionally, if the goals of the treatment are reached, and there is documentation of subjective and objective outcomes in the patient's condition, it is appropriate to continue the therapy. (See Outcome Expectations in the original guideline document). If not, the patient should be referred for an alternative treatment or re-evaluation by a specialist after showing no response to the initial course of treatment.

Course of Continuing Treatments

Follow-up courses of treatment may be similar in frequency and duration to the initial course of treatment. However, one of the goals of any treatment plan should be to reduce the frequency of treatments to the point where maximum therapeutic benefit continues to be achieved while encouraging more active self-therapy, such as strengthening and range-of-motion (ROM) exercises, and rehabilitative exercises. The frequency of continued treatment generally depends upon the severity and duration of the condition; treatment benefits are generally stronger and last longer as a condition moves from acute towards complete resolution and as the patient takes a more active role in his or her recovery.

Frequency and Duration for Continuing Courses of Treatments

Stage of Condition	Frequency	Duration	Re-evaluate after:
Acute	2 to 3x weekly	4 weeks	12 treatments
Sub-Acute	2 to 3x weekly	4 weeks	12 treatments
Chronic	1 to 2x weekly	6 to 8 weeks	12 treatments
Recurrent/Flare-up	1 to 2x weekly	4 to 8 weeks	12 treatments

When the patient's condition stabilizes, or no longer shows improvement from the therapy, a decision must be made on whether to continue treatment in order to stabilize and maintain the patient's progress, or to discontinue therapy. In some cases of chronic pain, it may be appropriate to utilize acupuncture for pain management, for example, for patients who have adverse reactions to pain medications or when the prescribed pain medications are not sufficient to manage the patient's chronic pain. This decision is based on a number of factors, including the potential benefit of the therapy and the potential risks involved in that therapy.

Duration and Frequency for Courses of Treatments for Neuromusculoskeletal Conditions

Stage of Condition	Initial Course		Follow-up Course(s)		Re-evaluate after:
	Frequency	Duration	Frequency	Duration	
Acute	3x weekly	4 weeks	2 to 3x weekly	4 weeks	12 treatments
Sub-Acute	3x weekly	4 weeks	2 to 3x weekly	4 weeks	12 treatments
Chronic	2 to 3x weekly	6 to 8 weeks	1 to 2x weekly	6 to 8 weeks	12 treatments
Recurrent/Flare-up	2 to 3x weekly	4 to 8 weeks	1 to 2x weekly	4 to 8 weeks	12 treatments

Patient Health and Safety

Identification and diagnosis of a condition/disorder is substantiated through historical data related to the chief complaint, onset of the condition, type of symptoms and their character, and previous history related to the condition. In

addition, findings from the physical examination assist in defining the severity of involvement and the specific diagnosis.

In order to protect the health and safety of patients, quality of care strategies for reducing clinical errors and improving patient safety should be observed. These strategies include encouraging practitioners to adopt evidence-based health care approaches to patient care, maintain their clinical skills at or above broadly accepted professional standards of care, and follow applicable case management guidelines.

Evidence based healthcare, provided by properly trained providers, is one of the most conservative, least invasive, and safest types of health care. This being said, it is important to note that all forms of treatment carry some risk of harm to the patient and acupuncture and electroacupuncture are no exception. Therefore, implementing basic risk management procedures that recognize, avoid, and manage actual or alleged adverse outcomes, can help clinicians minimize the risk of harm or injury to patients.

Improving Patient Health and Safety

The following goals are useful in improving patient health and safety:

1. Identify types and causes of adverse outcomes
2. Educate oneself regarding patient safety standards
3. Decrease the incidence of adverse events through the identification of preventable events and risk factors
4. Facilitate the reporting of adverse outcomes
5. Support or participate in studies to improve patient safety-related clinical outcomes

Cautions and Contraindications

Besides conditions for which acupuncture and electroacupuncture may not be appropriate or medically necessary, there are also certain clinical situations where acupuncture or electroacupuncture are contraindicated, or where a patient's condition must be co-managed by multiple healthcare specialists.

Conditions Contraindicating Acupuncture:

Acupuncture is contraindicated in patients or areas of the body when certain complicating conditions are present, such as:

- Open wound or burn
- Prolonged bleeding time/hemophilia
- Artificial joint implants
- Pacemaker

Conditions Requiring Co-management

Acupuncture should only be used as an adjunct to another form of standard medical intervention, under co-managed care with other health care personnel for certain conditions, such as:

- Cancer pain
- Chemotherapy-induced nausea
- Post-operative surgical pain
- Multiple sclerosis related pain
- Labor inducement for pregnancy

Conditions Requiring Referral

Patients should be referred to another specialty health care practitioner or to emergency care in certain instances, such as:

- The patient's condition is not responding to the treatment rendered.
- The patient's condition is worsening with treatment.
- The patient has an unmanaged progressive infectious condition.
- The patient experiences a medical emergency (e.g., heart attack, laceration, pneumothorax).
- A broken needle requires surgical removal.

Conditions Requiring Special Care

Conditions for which acupuncture may be contraindicated, or must be modified, due to individual circumstances:

- Pregnancy (avoid strong stimulation of acupoints LI 4, Sp 6, UB 60, UB 67, except to induce labor; avoid low back and abdominal points during last trimester)

Informed Consent

The provider of the medical procedure should explain the procedure in writing and verbally, including potential benefits and risks. The patient must be given the opportunity to ask questions and the medical provider should discuss treatment alternatives.

Head and Neck

A. Head

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of head conditions:

Tension Headache
Migraine Headache
Cluster Headache
Sinus Headache
Hypertensive Headache
Cervicogenic Headache

Head Trauma
Temporomandibular Dysfunction
Facial Pain

Quality of Evidence: **Level I**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Vickers et al., 2004; Allais et al., 2002; Liguori et al., 2000; Wonderling et al., 2004; Xue et al., 2004; Ahonen et al., 1983; Allais et al., 2003; Hansen & Hansen, 1985; Karakurum et al., 2001; Karst et al., 2001; Ghoname, Craig, & White, 1999; British Medical Association Board of Science & Education, 2000; Kaptchuk, 2002; "Acupuncture," 1997; World Health Organization (WHO), 1999)

B. *Neck*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of neck conditions:

Injuries to the Cervical Spine
Cervical Strain and Whiplash
Cervical Radiculopathy
Cervical Stenosis and Spondylosis
Herniated Cervical Disc
Torticollis
Unspecified Neck Pain
Cervical Arthritis
Degenerative Disc Disease
Muscle Spasm

Quality of Evidence: **Level I**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Birch & Jamison, 1998; He et al., 2004; Irnich et al., 2001; Irnich et al., 2002; Coan, Wong, & Coan, 1980; David et al., 1998; Konig et al., 2003; Loy, 1983; Nabeta & Kawakita, 2002; Petrie & Langley, 1983; Sator-Katzenschlager et al., 2003; Yue, 1978; Zhu & Polus, 2002; British Medical Association Board of Science & Education, 2000; "Acupuncture," 1997; WHO, 1999; Kaptchuk, 2002; Ernst, 1999; Linde et al., 2001).

Upper Extremity

A. *Shoulder*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of shoulder conditions:

Injuries to the Shoulder – General
Acromioclavicular Joint
Separation/Compression
Rotator Cuff Tear
Biceps Tendon Injury
Adhesive Capsulitis (Frozen Shoulder)
Shoulder Tendinitis/Bursitis
Thoracic Outlet Syndrome
Muscle Spasm

Quality of Evidence: **Level II**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Sun et al., 2001; Kleinhenz et al., 1999; Dyson-Hudson et al., 2001; Kaptchuk, 2002; "Acupuncture," 1997; WHO, 1999)

B. *Elbow*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of elbow conditions:

Lateral Epicondylitis
Medial Epicondylitis
Olecranon Bursitis
Ulnar Neuritis

In general, the application of acupuncture is recommended in the first 4 weeks of treatment as a part of an overall, initial, conservative, treatment plan. Specifically 3 to 6 acupuncture treatments over 7 to 21 days are listed as one Official Disability Guideline "Return-To-Work Pathway" for lateral epicondylitis (Work Loss Data Institute, 2003).

Quality of Evidence: **Level I**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Trinh et al., 2004; Fink et al., "Acupuncture," 2002; Fink et al., "Chronic epicondylitis," 2002; Tsui & Leung, 2002; Brattberg, 1983; British Medical Association Board of Science & Education, 2000; WHO, 1999)

C. *Forearm, Hand and Wrist*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of forearm, hand, and wrist conditions:

Forearm Sprain/Strain
Carpal Tunnel Syndrome
DeQuervains Syndrome

Trigger Finger
Wrist/Finger Sprain/Strain
Tendinitis of Forearm/Wrist
Arthritis

Quality of Evidence: **Level II**

Recommendation Grade: **Grade B**

(References supporting the recommendation: Kaptchuk, 2002;
"Acupuncture," 1997; WHO, 1999; Naeser et al., 2002)

Torso and Low Back

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of thorax and low back conditions:

Thoracolumbar Area

Injuries to the Costals
Low Back Sprain/Strain
Lumbar Facet Syndrome
Lumbar Disc Herniation
Sciatic Neuralgia
Sacroiliac Sprain/Strain
Spondylolisthesis
Spondylosis
Muscle Spasms
Lumbar Radiculopathy
Degenerative Disc Disease

Quality of Evidence: **Level I**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Carlsson & Sjolund, 2001; Meng et al. 2003; Molsberger et al. 2002; Ceccherelli et al. 2002; Lehmann et al. 1986; Leibing et al. 2002; Thomas & Lundberg 1994; Tsukayama et al. 2002; Wang & Tronnier, 2000; Yeung, Leung, & Chow, 2003; Coan et al. 1980; Grant et al., 1999; Kerr, Walsh, & Baxter, 2003; Kvorning et al. 2004; Leung, 1973; Mendelson et al., 1983; Sator-Katzenschlager et al. 2004; Condon et al., 2002; Ernst & White, 1998; Ghoname et al., "Percutaneous electrical nerve," 1999; Ghoname et al., "Acupuncture & sciatica," 1999; Ghoname et al, "The effect of stimulus," 1999; Guerreiro et al., 2004; Hamza et al. 1999; Ernst & White, 1998; Tait, Brooks, & Harstall, 2002; Kaptchuk, 2002; "Acupuncture," 1997; WHO, 1999; Linde et al., 2001)

Lower Extremity

A. Hip and Thigh

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of hip and thigh conditions:

- Osteoarthritis
- Muscle Spasm
- Tendinitis/Bursitis
- Piriformis Syndrome
- Capsulitis
- Avascular Necrosis
- Post-Operative Fractures & Hip Replacements

Quality of Evidence: **Level II**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Fink, Wipperman, & Gehrke, 2001; Haslam, 2001; Stener-Victorin, Kruse-Smidje, & Jung, 2004; "Acupuncture," 1997; WHO, 1999)

B. *Knee*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of knee conditions:

- Osteoarthritis
- Tendinitis
- Ligament Injuries
- Meniscus Injuries
- Patellofemoral Pain
- Post-Operative Pain
- Bakers Cyst

Quality of Evidence: **Level I**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Berman et al. 1999; Tukmachi et al. 2004; Jensen et al., 1999; Ng, Leung, & Poon, 2003; Vas, Perea-Milla, & Mendez, 2004; Naslund et al., 2002; Singh et al., 2001; Ezzo et al., 2001; "Acupuncture," 1997; WHO, 1999)

C. *Ankle and Foot*

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of ankle and foot conditions:

- Ankle Sprain
- Achilles Tendinitis
- Plantar Fascitis
- Tarsal Tunnel Syndrome
- Diabetic Neuropathy

Reflex Sympathetic Dystrophy
Osteoarthritis
Post-Operative Pain

Quality of Evidence: **Level IV**

Recommendation Grade: **Grade B**

(References supporting the recommendation: Hamza et al., 2000;
"Acupuncture," 1997; WHO, 1999)

14. Chronic and Postoperative Pain

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of chronic and postoperative pain conditions:

"Acupuncture, in combination with pharmacological interventions, may lower the need for medication and reduce the risk for side effects from these drugs (NIH, 2001)."

"Acupuncture may reduce nausea and vomiting if used in early postoperative period ("Acupuncture," 1997)."

Quality of Evidence: **Level II**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Marteleto & Fiori, 1985; Ghia et al., 1976; Junnila, 1987; WHO, 1999; Eshkevari, 2003; Tait, Brooks, & Harstall, 2002; Kaptchuk, 2002; "Acupuncture," 1997; WHO, 1999)

15. Systemic and Non-Regional Conditions

A. Fibromyalgia

The use of acupuncture and electroacupuncture is appropriate for, but not limited to, the following types of systemic and non-regional conditions:

Fibromyalgia

Quality of Evidence: **Level II**

Recommendation Grade: **Grade A**

(References supporting the recommendation: Berman et al, 1999; Deluze et al. 1992; British Medical Association Board of Science & Education, 2000; Tait, Brooks, & Harstall, 2002; Kaptchuk, 2002; "Acupuncture," 1997; WHO, 1999)

Definitions:

A. Quality of Evidence

- I. Multiple well-designed, randomized controlled trials, directly relevant to the recommendation, yielded a consistent pattern of findings.
- II. Evidence was obtained from at least one properly well-designed randomized controlled trial (RCT).
- III. Evidence was obtained from well-designed controlled trials without randomization.
- IV. Evidence consisted of the opinions of respected authorities, based on clinical experience, descriptive studies in case reports, or reports of expert committees.

B. Recommendation Grades

- A. A strong recommendation, based on an evaluation of the available evidence and general consensus of the expert panel, that acupuncture and electroacupuncture treatment is effective, always acceptable, and indicated
- B. A recommendation that was based on an evaluation of the available evidence and general consensus of the expert panel that acupuncture and electroacupuncture treatment should be considered acceptable, effective, and indicated.
- C. A recommendation that is not well established by evidence, or for which there is conflicting evidence regarding usefulness or efficacy, but which the expert panel has determined that acupuncture and electroacupuncture treatment may be acceptable, effective, and indicated.
- D. A recommendation, based on evidence or general agreement, that acupuncture and electroacupuncture treatment may be considered not useful or effective.
- E. A strong recommendation, based on evidence or general agreement, that a given procedure or treatment is not useful or effective, or in some cases may be harmful, and should be excluded from consideration.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations."

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate use of acupuncture and electroacupuncture, leading to safe, effective, reliable, and cost-effective care for the consumer

POTENTIAL HARMS

- Profound analgesia induced by electroacupuncture (EA) puts patient at risk of self injury, therefore the patient must be advised or restricted from strenuous physical activity after treatment.
- High amplitude EA that causes muscle fiber recruitment (twitching) can irritate or re-injure acute local strains and sprains.
- EA can sedate older or fatigued patients, causing drowsiness after treatment; hence some patients should arrange for others to drive them home after an EA treatment.

CONTRAINDICATIONS

CONTRAINDICATIONS

Acupuncture is contraindicated in patients or areas of the body when certain complicating conditions are present, such as:

- Open wound or burn
- Prolonged bleeding time/hemophilia
- Artificial joint implants
- Pacemaker

Electroacupuncture:

- Contraindicated in left chest region for patients with cardiac pacemakers, or for areas with imbedded neural stimulators and other electrical devices
- Not to be used on lower abdomen in pregnant women
- High frequency or high amplitude application may induce stress, which is contraindicated in cases of hypertension.

Conditions for which acupuncture may be contraindicated, or must be modified, due to individual circumstances:

- Pregnancy (avoid strong stimulation of acupoints LI 4, Sp 6, UB 60, UB 67, except to induce labor; avoid low back and abdominal points during last trimester)

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- The Council of Acupuncture and Oriental Medicine Associations provides these guidelines for health care practitioners and notes that decisions to recommend particular courses of treatment can only be made by qualified practitioners on the basis of their training, knowledge, and experience and in consideration of the particular conditions present in any individual patient. The Council of Acupuncture and Oriental Medicine Associations disclaim responsibility for any injury or damage resulted from any action or inaction taken by practitioners after consideration of these guidelines.
- These guidelines address frequency, intensity, and duration of treatment but do not make specific recommendations on styles of acupuncture, diagnostic methods, and point selection involved in the acupuncture treatments. The reason for this is due to the variety of effective acupuncture techniques currently being used in this country, and the fact that a particular patient may respond to one technique more readily than another. It is the responsibility of the practitioner to adopt the most effective technique and point selection for each patient's needs.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Organizational Considerations

There are a number of organizational barriers that will need to be overcome to implement these guidelines. These include a limited understanding and awareness of the efficacy and therapeutic benefit of acupuncture in treating neuromusculoskeletal conditions in acute, subacute and chronic stages, and the accompanying skepticism of the medical value of acupuncture. Consequently, most medical providers do not consider acupuncture as a primary modality for treating neuromusculoskeletal conditions. All too often acupuncture is used as a last resort for pain management when all other therapies have failed.

The delay of appropriate therapy can lead to delayed recovery, reduced quality of life, inability to work, preventable surgeries, expensive tests, chronic pain, increased risks of side effects due to pain medications or anti-depressants, long term rehabilitation, treatment that may have marginal beneficial results and perhaps irreparable complications. This in turn leads to increased costs to insurance carriers to provide long term medical treatment for chronic conditions which could otherwise be avoided. Educating decision makers of the benefits, safety and efficacy of acupuncture applied earlier in the treatment of injured patients will ensure the most appropriate and effective treatments for the patients.

Cost Considerations

The related cost implications are negligible. An educational program geared towards medical personnel and case managers (decision makers) already exists. These guidelines will simply supplement or replace existing printed material, web references and resources delivered on a monthly or quarterly basis. Face to face interaction between practitioners and the medical decision makers in the form of seminars and lectures will guarantee that the information will be delivered,

received, understood and applied in the most appropriate manner. Members of the acupuncture profession are available to perform this task.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Council of Acupuncture and Oriental Medicine Associates (CAOMA), Foundation for Acupuncture Research. Acupuncture and electroacupuncture. Evidence-based treatment guidelines. Calistoga (CA): Council of Acupuncture and Oriental Medicine Associates (CAOMA); 2004 Dec. 111 p. [91 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

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2004 Dec

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Foundation for Acupuncture Research - Professional Association

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Not stated

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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Acupuncture and Oriental Medicine National Coalition - Professional Association
Acupuncture Association of Rhode Island - Professional Association
American Academy of Medical Acupuncturists - Professional Association
California Society of Physical Medicine and Rehabilitation - Professional Association
California State Oriental Medicine Association - Professional Association
National Oriental Medicine Accreditation Agency - Medical Specialty Society
Traditional Chinese Medicine Association and Alumni, Inc. - Professional Association

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

For electronic or print copies contact the Council of Acupuncture and Oriental Medicine Associations, 1217 Washington Street, Calistoga, CA 94515; Web site: www.acucouncil.org.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 24, 2006.

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